THE NATURALIST.

VOL. I. JUNE, 1831. No. VI.

MAN.

(Continued from page 136.)

COLOR. When we direct our attention to the very numerous colors and shades which the several varieties of the great human family exhibit, merely with the view of ascertaining with how many external modifications nature has been pleased to diversify the masterpiece of the terrestrial creation, the subject, like all belonging to man, has its attraction and interest. But the investigation becomes much more important, when it embraces the causes of these appearances, and the degree of force belonging to each; when we inquire whether the color of a people depends on the climate of their present or former abode, or on their descent; whether that of children is influenced by the climate in which they are born, or by the blood of their parents; whether it is a sure token of race and pedigree; how many principal or leading colors we ought to assign to man as at present known; and whether any and what number of these are to be deemed original or primary. These points are yet undecided, and certainly worthy of our attention.

The very nature of language, the want of adequate expressions to denote the endless shades of color, and the indeterminateness of those which are applied to various tints, create some difficulties in this part of the subject, by producing considerable discrepancies in the reports of travellers, which again are of course increased in many cases by haste

and carelessness, by superficial examination, and loose choice of expressions. The same tribe will be very differently described according to the comparison which the observer makes between them and any model in his mind; or according to the contrast they may present with the lighter, darker, or differently colored people, whom he may have recently observed.

The human skin is dyed with various tints of white, yellow, red, brown, black; and it exhibits, in degree, every possible intermediate shade between the clear snowy whiteness of the most delicate European female, or of the Albino, and the deep ebony or jet black of a Gold-coast Negress. None of these gradations obtains so universally as to be found in all the individuals of any particular nation, nor is so peculiar to any one people, as not to occur occasionally in other widely different ones: we may, however, refer the national varieties of color, on the whole, with sufficient accuracy, to the five following principal classes:—

I. *White*, to which redness of the cheeks is almost wholly confined, being observed, at all events, very rarely in the other varieties. It is seen in all the European nations, excepting the Laplanders; in the western Asiatics, as the Turks, Georgians, Circassians, Mingrelians, Armenians, Persians, &c.; and in the northern Africans.

'It is only,' says Humboldt, 'in white men, that the instantaneous penetration of the dermoidal system by the blood can take place,—that slight change of the color of the skin, which adds so powerful an expression to the emotions of the soul. "How can those be trusted, who know not how to blush?" says the European, in his inveterate hatred to the Negro and the Indian.'

Yet in some very light examples of the brown and yellow varieties, blushing has been noticed; as by Forster in the fairest Otaheitean women, and by Dampier, in the Tunpuinese; 'They are,' he observes, 'of a tawny Indian color; but, I think the fairest and clearest I ever saw of that complexion: for you may perceive a blush or change of color in some of their faces on any sudden surprise of passion, which I could never discern in any other Indians.'

Considerable variety, however, will be found to exist in the color known by the general epithet *white*.

That singular description of human beings, called Albinos, possess a skin of a peculiar reddish, or an unnatural white tint, with corresponding yellowish white or milk white hair, and red or at least very light blue or gray eyes. The cuta-

neous organ has sometimes a roughness, which has been construed to approach to a degree of lepra. The hair is unnaturally white and soft; it has not the snowy whiteness of old age, nor the elegant light yellow or flaxen appearance of the fair-haired (*blondins* Fr.) German variety; but it is compared to that of milk or cream, or of a white horse. The eyebrows, eyelashes and beard are of the same color. The iris is of a pale rose color, and the pupil intensely red: these parts, in short, are exactly similar to the corresponding ones in white rabbits and ferrets.

The characters of the Albino arise from a deficiency of the coloring principle, common to the skin, hair and eyes. Thus the former has the hue, which its cellular and vascular contexture produces; the hair is reduced to its simple organic groundwork; and in the eyes, which are entirely destitute of pigmentum, the color of the iris depends on the fine vessels which are so numerous in its composition, and that of the pupil on the still greater number of capillaries which almost entirely form the choroid membrane.

The close connection of these parts, in respect to their color, is evinced by the fact that neither is ever separately affected.

The state of the eyes is the principal source of inconvenience. The absence of the black pigment, which has the important office of absorbing superfluous portions of light, renders the eye preternaturally sensible of this stimulus. Strong lights affect the organ painfully: even the glare of open day is too much. Hence the eyelids are more or less closed; the eyes are described as weak and tender, and sometimes as affected with chronic lippitudo. These evils are balanced, in some measure, by superior power of vision in twilight, dusk, or imperfect darkness.

Mr. Jefferson had seen seven examples of this peculiarity in the Negro race. Three of them were sisters; having two other full sisters who were black. They were uncommonly shrewd, quick in their apprehension and reply. Their eyes were in a perpetual tremulous vibration, very weak, and much affected by the sun; but could see better than other persons in the night. The fourth is a woman, whose parents came from Guinea, and had three other children of their own color. She was freckled; and had such weak eyes, that she was obliged to wear a shade in the summer; but she could see better in the night.

Wafer has given a good description of those which are met with in the isthmus of Darien. Their skin was milk white,

much like the color of a white horse, and covered with a short down. 'They see,' says he, 'not very well in the sun, poring in the clearest day, their eyes being but weak, and running with water if the sun shine towards them: so that in the daytime they care not to go abroad, unless it be a cloudy, dark day. But notwithstanding their being thus sluggish and dull in the daytime, yet when moonshiny nights come, they are all life and activity, running abroad and into the woods, skipping about like wild bucks; and running as fast by moonlight, even in the gloom and shade of the woods, as the other Indians by day, being as nimble as they, though not so strong and lusty.' Hence they are called moon-eyed.

The peculiarity always exists from birth: it never changes afterwards.

A classical writer on the natural history of man has conceived that they labor under a disease, which he refers to the cachexiæ, and considers as akin to leprosy; and this opinion has had so much weight with Dr. Winterbottom, that he never mentions the Albinos in his first volume, which contains a description of the native Africans; but thrusts them into the second, among the diseases.

'These views,' says Lawrence, 'are completely incorrect. The individuals in question do not exhibit a single character of disease. All their functions are executed as in other persons. They are born of healthy parents, occur among the robust and hardy members of savage tribes, and a similar deviation takes place in many wild animals.' Mr. Jefferson expressly mentions, of the seven cases which he saw in American Creole Negroes, that all the individuals were well formed, strong and healthy.

The first example mentioned by Dr. Winterbottom, is the daughter of two Mulattoes, born in Nova Scotia, who had all the Negro features, with woolly hair of a dirty white color, and a skin equalling in whiteness that of an European, without anything disagreeable in its appearance or texture. Her eyes were between a red and light hazel color, and not much affected by light. There are no signs here of cachexiæ or leprosy; nor are there any in the two Swiss youths described by Blumenbach, and before him by Saussure. They seem, indeed, to be short for their age; the elder was twenty-two years old, with the stature of fifteen: the younger seventeen, with that of twelve. Two writers of very different characters, who had both seen African Albinos, seem to have equally felt that the notion of disease was quite unfounded.

This variety was first observed in the African, as the great difference of color renders the variation more striking: hence the individuals were termed leucæthiopes, or white Negroes; their peculiar constitution—for the deviation is by no means confined to the surface of the body—may be conveniently termed, after some modern authors, leucæthiopia. From their avoiding the light, the Dutch gave them in the island of Java the contemptuous appellation of Kakkerlakken, cockroaches, insects that run about in the dark; and hence the French name Chacrelas. The Spaniards called them Albinos, and the French Blafards.

So far is this variety from being peculiar to the Negro, or even to the torrid zone, that there is no race of men, nor any part of the globe, in which it may not occur. Blumenbach has seen sixteen examples of it in various parts of Germany; and it has been also noticed in Denmark, England, Ireland, France, Switzerland, Italy, the Grecian Archipelago and Hungary.

It is probably more common in Africa than elsewhere: Dr. Winterbottom mentions eleven instances among the native tribes about Sierra Leone: and Mr. Jefferson seven among the Negro slaves of America. The African Albinos do not present that entire absence of coloring matter from the eye, which we observe in the European instances. Mr. Jefferson does not mention the color of the eyes; but Dr. Winterbottom describes them as light blue or brown. They were as weak as the red eyes of our Albinos.

Mr. Bowdich says that the king of Ashantee has collected nearly a hundred white Negroes.

Humboldt says that examples of this degeneration are rare in the copper colored race. Yet they seem rather numerous, by Wafer's description, in the isthmus of Darien.

Dubois states that they are not uncommon among the Hindoos.

Cook met with them in several islands of the Pacific.

In all cases, however, this leucæthiopic constitution has only occurred sporadically, or in detached instances, as a congenital variety, from individuals of the ordinary characters in their respective races. It has indeed been asserted that whole tribes of Albinos exist in Africa, Java, Ceylon and the isthmus of Darien; but no eye-witness reports such a fact; and Wafer, whose authority is often cited, expressly mentions, 'that they are not a distinct race by themselves, but now and then one is bred of a copper colored father and mother.'

Hence the notion of entire leucæthiopic nations may be regarded as completely unfounded.

There is another description of men with a very fair or white skin, yellow or red hair, and generally blue or light gray eyes. Such individuals, when the health is good, and the circulation active, have a rosy tint, which is deeper and more florid in the face. The cutaneous capillaries are easily filled; and their 'eloquent blood' sympathizes with every mental emotion. The ancient and modern Germans, and the nations descended from them, the Belgians, Dutch, the Danes, Swedes, English, &c. have this character.

Lastly, there is a most extensive race, including nearly all the people enumerated in the first division, with the skin, although white, possessing more or less of a brown tint, accompanied with dark brown or black hair, and dark eyes.

II. *Yellow or olive* (*gilvus* or *buxeus*, a middle tint, between that of ripe wheat and boiled quince or dried lemon peel) characterizes the Mongolian tribes, usually called, together with the inhabitants of a great part of Asia.

III. *Red or copper color* (*bronzé* Fr. an obscure orange or rusty iron color, not unlike the bark of the cinnamon tree) prevails in various shades among the native Americans throughout the whole continent.

IV. *Brown or tawny* (*basané* Fr. a middle tint between the color of fresh mahogany and of cloves or chesnuts.) It characterizes the Malays, and most of the inhabitants of the numerous islands scattered through the Pacific Ocean.

V. *Black*, in various shades, from the sooty color or tawny black, to that of pitch or ebony, or jet black. This prevails very extensively on the continent of Africa, characterizing all the Negro tribes. It is found also in the Negro-like natives of New Holland, Van Diemen's Land, Papua or New Guinea, the New Hebrides, and other islands of the South Sea; and is seen, mingled with the national color, in Brazil, California and India. The New Caledonians constitute an insensible transition, with the chesnut colored islanders of Tongataboo, and the dark New Hollanders, from the tawny or brown Otaheiteans to the Papuas or Negroes of New Guinea.

In describing these varieties, it is necessary to fix on the most strongly-marked tints, between which there is every conceivable intermediate shade of color. The opposite extremes run into each other by the nicest and most delicate gradations; and it is the same in every other particular, in which the various tribes of the human species differ. This forms no slight objection to the hypothesis of distinct species: for,

on that supposition, we cannot define their number, nor draw out the boundaries that divide them: whereas, in animals most resembling each other, the different species are preserved pure and unmixed. Neither does the color, which we have described in general terms as belonging to any particular race, prevail so universally in all the individuals of that race as to constitute an invariable character, as we should expect if it arose from a cause so uniform as an original specific difference; its varieties, on the contrary, point out the action of other circumstances. Thus, although the red color is very prevalent on the American continent, travellers have observed fair tribes in several parts; as, Ulloa and Bouguer in Peru; Cook and Vancouver at Nootka Sound; Humboldt near the sources of the Orinoco; and Weld near the United States. The natives of New Zealand vary from a deepish black to an olive or yellowish tinge. In the Friendly Islands many of the women are as fair as those of Spain or Portugal; several of both sexes are of an olive color; and many of a deep brown.

The domestic animals exhibit varieties entirely analogous to those which have just been enumerated; a fact so familiarly known with respect to the sheep, pig, horse, cow, dog, cat, rabbit, &c. that it cannot be necessary to support the assertion by any details. The leucæthiopic constitution occurs too in wild and domesticated animals, as well as in the human subject. It has been observed (not to mention the well-known examples of the rabbit, ferret, mouse, horse) in the monkey, squirrel, rat, hamster, guinea-pig, mole, opossum, martin, weasel, roe, fox, rhinoceros, elephant, badger, beaver, bear, camel, buffalo and ass. The crow, canary-bird, blackbird, partridge, common fowl and peacock, are sometimes the subjects of it; but it has never been seen in any cold-blooded animal.

In the leucæthiopic mammalia, and birds just enumerated, the nature and characters of the deviation seem to be perfectly analogous to those of the human Albino. The pure whiteness of their skin and other integuments, and the redness of the iris and pupil, mark the same deficiency of coloring matter. A white mouse possessed by Blumenbach also exhibited the intolerance of light, which has been noticed almost universally in the human examples; the animal kept its eyelids closed even in twilight.

THE ORANG OUTANG.

GRAND DIVISION—*Vertebralia*, possessing a vertebral column or spine. CLASS—*Mammalia*, nourishing the young by milk. ORDER—*Quadrumani*, having four hands. GENUS—*Simia*, comprising the ape tribes. SPECIES—*Satyrus*, being of a lascivious nature.

THE orang outang, now to be described, from having no tail, and from other resemblances, may be considered a variety of the ape species. But its history, from defective information, more particularly of the animal in the adult state, is involved in so much uncertainty, that even to the present day, it is extremely doubtful whether it has been properly identified as a distinct species, or whether it ought only to be considered a variety of the common ape. This is partly to be attributed to the systematic writer's being obliged to take for granted what others have written before him, or to obtain his information from the unscientific traveller, who, from the love of the marvellous, or from allowing his imagination to get the better of his judgment, has often given very extraordinary accounts of the animals he has seen in the wild and native state, and which subsequent experience has not confirmed; and partly to those animals which have been actually brought under the eye of the man of science, being too young to determine what their real form and character would have been, had they reached the adult state.

Thus Linné, whose definitions, in general, are so clear and distinct, was led not only to believe the most exaggerated accounts of the orang outang, but almost to allow him one of the most important physical qualifications of man—that of speech. And Buffon, with other extraordinary attributes, had led himself to believe that the erect position when he walks is his natural attitude; while he has confounded the orang outang, a native of Asia, and apparently a mild and docile animal, with the chimpanzee pongo, or large African ape, whose ferocity of character, and ungovernable passions, are stated to render travelling dangerous in the countries which he inhabits.

We will give Buffon's own account of the animal which he witnessed, as it will serve to show that the actions he relates were obviously artificial, the result of previous education, and that they took place under the coercion of the keeper. After concluding, that until better informed, we must regard the

large African and Asiatic apes as constituting but one species, he proceeds:—'The orang outang which I saw, ***walked always on two feet, even when carrying things of considerable weight.*** His air was melancholy, his gait grave, his movements measured, and very different from those of other apes. He had neither the impatience of the Barbary ape, the maliciousness of the baboon, nor the extravagance of the monkey. It may be alleged that he had the benefit of instruction; but the other apes which I compared with him, were educated in the same manner. Signs alone were sufficient to make the orang outang act; but the baboon required a cudgel, and the other apes a whip, for none of them would obey without blows. I have seen this animal present his hand to conduct the people who came to see him, and walk as gravely along with them as if he formed a part of the company. I have seen him sit down at table, unfold his towel, wipe his lips, use a spoon or fork to carry the victuals to his mouth, pour his liquor into a glass, and make it touch that of the person who drank along with him. When invited to take tea, he brought a cup and saucer, placed them on the table, put in sugar, and allowed it to cool before he drank it. All these actions he performed without any other instigation than the signs, or verbal orders of his master, and often of his own accord. He did no injury to any person; he even approached company with circumspection, and presented himself as if he wanted to be caressed.'

The above brief account of the actions of the orang outang in the domesticated state, paints in very lively colors the docility of the animal, and the very strong imitative powers he possesses, when they are called into exercise by education; but while we consider the erect position to be a human attribute only, and therefore doubt this animal's capability of walking on his hind legs for much length of time, (however he may have been taught to do so for a short time in the presence of strangers,) we see nothing in these actions indicative of that intelligence and sagacity which we so often see in the dog, and not unfrequently in the elephant; though from the deficient resemblance in those two animals to the human species, they may not appear so striking at first sight as in the orang outang.

The large African apes, under the denomination of pongo, which have been mistaken for the orang outang, are stated by credulous travellers to be of a very extraordinary magnitude, and to be so powerful, 'that ten men are not able to hold them—that if stray Negroes fall in their way they will

attack and kill them—*that they always walk on their hind legs* —that with stones, large clubs, or even with their fists only, they will drive before them the wild elephants, and that they actually attacked two of the slaves near the English fort in Guinea, and would have poked their eyes out with sticks had not some other Negroes come to their assistance.' Most of the accounts we have seen of the larger ape tribes, convey with them, as in the above instance, a mixed proportion of truth, with very questionable probability; and they serve to show how little we are actually acquainted with the natural habits of animals, whose secluded haunts and extreme wildness of character render them not only difficult of approach, by which we could satisfactorily observe their movements, but also prevent us from capturing any of the species excepting (as before observed) an occasional young one, whose character has not been fully developed, and which, brought to Europe, from the great difference of the climate, has never survived long enough to make up for this deficiency.

Under such disadvantages, all we can attempt in our history of the orang outang, is to avail ourselves of the latest, and what may be considered the most authentic information that offers; and we have accordingly not only consulted systematic writers on zoology of the first respectability, but fortunately have before us some very interesting accounts of this animal, as given by Drs. Abel and Macleod, who returned with Lord Amherst from China, by Mr. Grant, assistant surgeon upon the Bengal Establishment, and an account of one by Dr. Jeffries of this city, which was carried from Borneo to Batavia, and came into the possession of Mr. Forrestier of that place, where he remained some time. By him he was sent, consigned to Mr. Charles Thacher, merchant of this place, in the Octavia, Capt. Blanchard. He died on the night of June 2, 1825, the first after his arrival—disappointing the sanguine expectations of his owners of great pecuniary remuneration from his exhibition in public.

The orang outang seems to be exclusively an inhabitant of the larger islands in the Indian Ocean, within the latitudes approaching the equator, but principally that of Borneo, and has rarely been captured of a greater height, from the crown of the head to the heel, than three feet and a half. That under the observation of Drs. Abel and Macleod measuring three feet; the one noticed by Mr. Grant only twenty-six inches; and the one by Dr. Jeffries three feet and a half. But as these were considered very young, it is probable they grow to a much larger size. In his physical aspect, the orang

outang, it is admitted by all, bears a much stronger resemblance to the human form than any other animal, but this is only in caricature and in parts; his extreme conformation, taken as a whole, sufficiently evincing his alliance with the brute species. His color is of a reddish brown, the skin below the hair assuming a bluish gray; the whole of the body and extremities (excepting the face and palms of the hands and feet) being covered with thick and straight hair, between five and six inches in length (See Fig. 1;) but it is thickest on the back, arms and legs, and more thinly scattered over the shoulders, elbows and knees. The face, and the palms of the hands and feet are quite naked, excepting a few scattered hairs on the cheeks and chin, which give a faint resemblance of whiskers and a beard. The upper portion of the cranium, which is covered with the same kind of hair as the body, the forehead, the eyes, which are dark and full, with the shape, depth and direction of their respective orbits, the eyelashes and the ears, are the parts which approach nearest to those of man, and these bear a striking resemblance to the human form not easily to be mistaken. But as we descend from the forehead and eyes, the extreme flatness of the nose, and the oblique and narrow opening of the nostrils, the projecting and mammillary form and wide aperture of the mouth, diminish the likeness, and at once show the close affinity of the animal with the brute species. The number of his teeth has hardly yet been defined; the animals hitherto captured being too young to judge of what that might amount to in the adult state. The orang outang described by Dr. Abel had twenty-four, namely, eight incissors, (the two middle ones in the upper jaw being twice the length of the lateral ones,) four canine and twelve double teeth. While the one noticed by Mr. Grant had only twenty, consisting of eight molars or double teeth, eight incissors, and four canine, not very white or well arranged, the roof of the mouth being quite black. And the one noticed by Dr. Jeffries had in each jaw two dentes incisivi; the two middle of the upper jaw very long and broad, measuring seven-eights of an inch in length, and five-eights in breadth, the two lateral not fully grown; two cuspidati and four molar teeth, making in all twenty-eight.

Descending from the head, we again find a resemblance to the human form in the shoulders, neck and chest, though the latter is wide in proportion to the pelvis; in the form of the arms, particularly of the elbows, and in the appearance of the hands, excepting that they are narrower and more elongated than the human, and the fingers more tapering, the thumb being

very short, scarcely reaching the first joint of the fore finger. But the arms are long in proportion to the legs, and to the height of the body; and this, with some other circumstances presently to be noticed, is unfavorable to the erect position. All the fingers have very perfect nails, oval in form, and exactly terminating at their extremities. Below the chest, when the animal is in the quiescent state, the abdomen is prominent, which gives him a grotesque appearance in the sitting posture.

The pelvis, unlike the human, is narrow and contracted, and this, with the deficiency of the glutœri muscles, and those of the thighs and legs, (the latter being short and bandy,) remove him in the lower portion of his frame still further from the human resemblance, and disqualify him altogether from walking or resting long in the erect attitude.

The feet, though resembling those of man in the palms and heels, are both narrower and longer than the human, having distinct fingers in the place of toes, with the great one very short. Those in Dr. Abel's orang outang being without nails; those of Mr. Grant and Dr. Jeffries with them.

The orang outang has no cheek pouches, like the common ape, in which the latter collects his food previous to mastication and deglutition, nor calosities upon the glutœri muscles; but below the chin he has a double pendulous membrane, which, when the animal is angry or pleased, swells out and gives the appearance of a double chin; and this, communicating with the ventricles of the glottis, produces a thickness and hoarseness of the voice, without, in any degree, (as has been imagined by some naturalists,) approaching to articulation. These external peculiarities are not the only physical resemblances which the orang outang bears to man; for, like him, he has an *uvula*, which no other animal but man and the ape tribes possess, while he resembles him very closely in the structure of the hyoid bone, in that of the liver and of the *cæcum* or blind intestine, and the anatomy of the brain, at least more nearly so than any other animal. But with respect to his walking in the erect attitude, which has been adduced as a confirmatory proof of his still nearer approximation to the human species, however we may credit his having been taught to do for a short time, or his having been occasionally seen in the wild state in that position, yet, it is *physically impossible* that he can stand or walk erect for much length of time without returning to his natural attitude, the horizontal. Since the width of the chest, compared with the pelvis, which is extremely contracted, the shortness of the lower

extremities in proportion to the arms, with the great deficiency of muscles in the flanks, thighs and legs, and the narrowness and the length of the feet, all tend to throw the head and the body forward when in the erect position, and compel the animal, when walking in that attitude, frequently to return his arms to the ground to enable him to preserve his equilibrium. This is confirmed by Dr. Abel, who makes the following remarks:—

'The orang outang is utterly incapable of walking in a perfectly erect posture; he betrays this in his whole exterior conformation, and never wilfully attempts to counteract its tendency. His head leaning forward and forming a considerable angle with the back, throws the centre of gravity so far beyond the perpendicular, that his arms, like the fore legs of other animals, are required to support the body. So difficult indeed is it for him to keep the upright position for a few seconds, under the direction of his master, that he is obliged, in the performance of his task, to raise his arms above his head and throw them behind him to keep his balance.'

It is the quality of climbing, for which their limbs are so peculiarly adapted, and not the erect position, which is the attribute that nature intended the orang outang, and all the ape and monkey families, exclusively to possess, as fully confirmed by the authorities which we have previously quoted, as well as by every individual who has seen them in the wild state; and in this action they seem to excel all other animals; running up with the greatest facility, the rigging and masts of vessels, and the tops of houses, when under human protection; and in their native regions, the loftiest trees; and making their summits their nocturnal abodes. Thus the forests form the principal haunts of this extraordinary race of animals, and in these, and in their vicinity, they find the fruits, the eggs of birds, the insects, and the seeds of vegetables, from which their food is derived; and it is in these recesses that their young are brought into life, and protected until they can help themselves. But all these are physical circumstances only. The most important fact to be determined is, how nearly the orang outang approaches our own species in those intellectual qualifications which have elevated man very far above, and have bestowed on him that superiority which he possesses over every other part of the creation. And here we are of opinion it must be admitted, that he falls much short of what might be expected from him, upon taking a hasty view of his physical resemblance. For though he soon after being cap-

tured becomes docile and tractable, shows great affection towards those who treat him with kindness, displays much cunning and adroitness in everything which regards himself, and is very readily instructed in many of the common actions belonging to our species, of which we have given from Buffon some very illustrative proofs, yet he betrays little of that comprehensive intelligence and sagacity, which alone can render the brute animal interesting, and which, in so many instances, have nearly placed the dog upon a footing with ourselves; at one time, the most amusing of companions, at another, the sure and faithful defender of our lives and properties.

The actions of the orang outang are therefore to be attributed either to his imitative powers, of which he possesses a very extraordinary share, or to his instinctive ones; producing in him that animal sagacity and cunning, which lead to a variety of movements rarely to be observed in any other quadruped.

We have formed this opinion, not only from our own observations on the ape tribes in general, but from the best accounts which we have been able to consult on the subject, but more especially from the recent accounts of Doctors Abel and Macleod, Mr. Grant and Dr. Jeffries, (already alluded to,) in which have been noticed many interesting anecdotes of this animal, all confirmatory of this opinion, some of which we now propose to relate; but we regret the limits of this article will not permit us to detail more of them.

Dr. Jeffries relates the following account of the habits and manners of the orang outang from Capt. Blanchard.

'He was put on board the Octavia, under the care of this gentleman, and had a house fitted for him, and was provided with poultry and rice sufficient for the voyage. Capt. Blanchard first saw him at Mr. Forrestier's house in Batavia.

'While sitting at breakfast, he heard some one enter a door behind, and found a hand placed familiarly on his shoulder; on turning round, he was not a little surprised to find a hairy negro making such an unceremonious acquaintance.

'George, by which name he passed, seated himself at table by direction of Mr. Forrestier, and after partaking of coffee, &c. was dismissed. He kept his house on ship board clean, and at all times in good order; he cleared it out daily of remnants of food, &c. and frequently washed it, being provided with water and a cloth for the purpose. He was cleanly in his person and habits, washing his hands and face regularly, and in the same manner as a man. He was docile and obedient, fond of play and amusement; but would sometimes become so

rough, although in good temper, as to require correction from Capt. Blanchard, on which occasions he would lie down and cry very much in the voice of a child, appearing very sorry for having given the offence. His food was rice *paddy* in general, but he would, and did, eat almost anything provided for him. The *paddy* he sometimes eat with molasses, and sometimes without tea, coffee, fruit, &c. which he was fond of, and was in the habit of coming to the table at dinner, to partake of wine; this was in general, claret.

'His mode of sitting was on an elevated seat, and not on the floor. He was free from some of the peculiar propensities of monkeys. His bowels were in general regular. The directions given by Mr. Forrestier were, in case of sickness, to give him castor oil. It was administered to him once on the beginning of his passage, and produced full vomiting and free catharsis, with effectual relief. He sickened a second time on the latter part of his voyage, and resisted the attempts of the captain and several strong men to get the oil into the stomach. He continued to fail gradually, losing his appetite and strength, until he died, much emaciated, soon after the ship anchored. Obstruction of the bowels was no doubt the source of his sickness and cause of his death.'

To conclude, we only beg leave to remark, that, however, for reasons which cannot be brought within our limited comprehension, the orang outang bears in certain parts of his physical conformation, a striking resemblance to man, and mechanically can imitate him in many of his actions, yet we trust it will appear, that he is most obviously placed at an immeasurable distance from him, in all those nobler qualifications for which man is so pre-eminently to be distinguished—in the uniformly erect attitude of his body—in his bold and commanding gait—in the comprehensive and complicated uses which he make of his hands—in the power he possesses of communicating and receiving ideas through the medium of speech, and more especially in all those inventive and highly intellectual endowments, which have more or less rendered subservient to human will and pleasure, every other part of the animal kingdom. Thus the boasted hypothesis of the several parts of the creation being united by one great chain, of which man is only the first in the link, exists but in the imagination of a few fanciful philosophers, while, in the estimation of the best informed naturalists, he holds a distinct and separate place; at once the arbiter of the surrounding objects, and the no mean counterpart of the divine Architect, at whose mandate man and all animated beings were first called into existence.

THE HUMBLE BEE.

GRAND DIVISION—*Articulata*, having jointed trunks and limbs. CLASS—*Insecta*, comprising insects. ORDER—*Hymenoptera*, having membraneous wings. GENUS—*Apis*, comprising bees. SPECIES—*Terrestris*, building their habitations in the earth.

—

THE humble bee forms an intermediate link between the hive bee and the wasp. Its history is less imposing perhaps, but not less curious than the hive bee. Some of them live in societies; but their limited number, and the rudeness of their dwellings, when compared with the populousness, the order and architecture of the hive, make us feel that we are contemplating a village, after having seen a large metropolis. The contrast, however, is interesting; and a true philosopher, after he has marked the manners of a civilized kingdom, always finds his knowledge enlarged by the observation of the simpler habits of the rustic, or even the ruder customs of the savage. The humble bee, so well known to us, may be truly termed a villager. The community, which numbers from twenty to three hundred, consists of females of two sizes, the very largest, and the small ones; males, which are stingless, and neuters.

The *large females* are the original founders of their republics. They are often so large, that by the side of the smaller ones or the workers, which in every other respect they exactly resemble, they look like giants opposed to pygmies. They are excluded from the pupæ in the autumn, and pair in that season with males produced from the eggs of the small females. They pass the winter under ground, and, as appears from the observations of M. P. Huber, in a particular apartment, separate from the nest, and rendered warm by a carpeting of moss and grass, but without any supply of food. Early in the spring they lay the foundations of a new colony, without the assistance of any neuters, which all perish before the winter.

The employment of the large females, besides the care of the young brood and the collecting of honey and pollen, is principally the construction of the cells in which her eggs are to be laid, which M. P. Huber seems to think, though they often assist in it, the workers are not able to complete by themselves. So rapid is the female in this work, that to make

a cell, fill it with pollen, commit one or two eggs to it, and cover them in, requires only the short space of half an hour! Her family, at first, consists only of workers, which are necessary to assist her in her labors; these appear in May and June; but the males and females are later, and sometimes are not produced before August and September. As in the case of the hive bee, the food of these several individuals differs; for the grubs that will turn to workers are fed with honey and pollen mixed, while those that are destined to be males and females are supplied with pure honey.

The instinct of these larger females does not develope itself all at once; for it is a remarkable fact, that when they are first hatched in the autumn, not being in a condition to become mothers, they are no object of jealousy to the small queens, (as we shall soon see they are when engaged in oviposition,) and are employed in the ordinary labors of the parent nest—that is, they collect honey and pollen, and make wax; but they do not construct cells. The building instinct seems, as it were, in suspense, and does not manifest itself till the spring, when the maternal sentiment impels them at the same time to lay eggs and to construct the cells in which they are to be deposited.

The *small females* are only to be distinguished from the large ones by their diminutive size, and from the workers chiefly by their instincts. These minor queens produce only male eggs, which come out in time to fertilize the young females that found the vernal colonies.

M. Huber, watching at midnight the proceedings of a nest which he kept under a glass, observed the inhabitants to be in a state of great agitation; many of these bees were engaged in makimg a cell; the queen-mother of the colony, as she may be called, who is always extremely jealous of her pigmy rivals, came and drove them away from the cell;—she in her turn was driven away by the others, which pursued her, beating their wings with the utmost fury, to the bottom of the nest. The cell was then constructed, and two of them at the same time oviposited in it. The queen returned to the charge, exhibiting similar signs of anger; and chasing them away again, put her head into the cell, when, seizing the eggs that had been laid, she was observed to eat them with great avidity. The same scene was again renewed, with the same issue. After this, one of the small females returned and covered the empty cell with wax. When the queen-mother was removed, several of the small females contended for the cell with indescribable rage, all endeavoring to lay their eggs in

it at the same time. These small females perish in the autumn.

The *males* (See Fig. 2.) are usually smaller than the large females, and larger than the small ones and workers. They may be known by their longer, more filiform, and slenderer antennæ; by the different shape, and by the beard of their mandibles. We learn from Reaumur that the male humble bees are not an idle race, but work in concert with the rest to repair any damage or derangement that may befall the common habitation.

The *workers*, which are the first fruits of the queen-mother's vernal parturition, assist her, as soon as they are excluded from the pupæ, in her various labors. To them also is committed the construction of the waxen vault that covers and defends the nest. When any individual larva has spun its cocoon and assumed the pupa, the workers remove all the wax from it; and as soon as it has attained to its perfect state, which takes place in about five days, the cocoons are used to hold honey or pollen. When the bees discharge the honey into them upon their return from their excursions, they open their mouths and contract their bodies, which occasions the honey to fall into the reservoir. Sixty of these honey pots are occasionally found in a single nest, and more than forty are sometimes filled in a day. In collecting honey, humble bees, if they cannot get at that contained in any flower by its natural opening, will often make an aperture at the base of the corolla, or even in the calyx, that they may insert their probosces in the very place where nature has stored up her nectar.

The hive bee must have a ready made excavation for the reception of its comb, but the humble bee raises its dwelling from the foundation. There is nothing imposing in its exterior; on the contrary, a tuft of moss, six or seven inches high, buried seemingly in a clod, conceals all that is dear to these little creatures (See Fig. 5.) A closer inspection shows, that the mossy filaments are carefully interlaced, and so nicely put together, that not a grain of dirt is intermingled with its texture. This light vault, although two or three inches thick, is scarcely capable of sheltering the young from the wind and rain; and to remedy this defect, its inner or concave surface is lined with a species of cement which effectually excludes the wet. If a nest be watched, one of its inhabitants will be soon seen to bury itself in a mossy hole, perhaps a foot from the nest itself. This is the entrance of a covered and secret way leading to the inside of the habitation. Should the curi-

osity of the observer overcome his reluctance to destroy the patient labor of the humble bee, he will have an opportunity of observing the mode in which it works. The nest is always placed in the midst of the material from which it is to be constructed, and Reaumur never was able to detect any of its inhabitants bringing moss from a distance; rather than do so, the bee repairs the vault with material taken from the covered way, and even choosing to do without it altogether, rather than forage for moss. In some instances they seem to be led by instinct to vary their proceedings. Thus, M. P. Huber, having placed a nest of humble bees under a bell-shaped glass, stuffed the interval between its bottom and the irregular surface on which it rested, with a linen cloth; the bees, finding themselves in a situation where no moss was to be obtained, tore this cloth thread by thread, carded it with their feet into a felted mass, and applied it to the same uses as moss, for which it proved an excellent substitute. Some other humble bees tore the cover of a book with which he had closed the top of a box which contained them, and made use of the detached morsels in covering their nests.

They divide their labor in a curious manner. A bee settles on a tuft of moss, its head being turned from the nest, and its tail towards it; with its teeth and its first two legs it divides and disentangles the filaments, and transfers them to the two middle legs; the second pair seize and push them to the third pair, and these thrust them as far behind the tail of the bee as they can reach, by which means the moss is advanced towards the place where it is proposed to build the nest, by a space which somewhat exceeds the whole length of the body of one bee (See Fig. 3.); another bee, placed in a line with the first, receives the ball of material with its fore legs, and, like the first, transfers it the whole length of its body; and thus four or five of these insects, stationed in a row, spare time and labor in conveying the material for building, on the same principle that laborers may be seen transferring their wheelbarrows from one to another.

The inside of the nest contains a comb or combs, which show no trace of the geometrical principles recognized in the workmanship of the hive bee. The upper surface of each comb is irregularly convex, its under concave, and it is composed of oval eminences placed against each other (See Fig. 4.) These are not cells for the young, as in the comb of the hive bee, but cocoons spun by the larvæ before their final metamorphoses. By the sides of these oval bodies, and sometimes covering and concealing them, are deposited ill-shaped mass-

es, which constitute the chief object of the labor of these rustics. These are the receptacles for the eggs of the female, and contain not one egg only, but sometimes as many as thirty. They are filled with a species of bee-bread, formed of the pollen of flowers, moistened and prepared by the bee, so that the young worm, when hatched, is surrounded with a mass of matter which serves the double purpose of food and raiment, nourishing and keeping it from external impressions. Besides these receptacles for eggs, the nest contains also open cylindrical vessels, which are filled with excellent honey, destined for the common supply.

Huber relates a curious story to illustrate the good nature and generous disposition of the humble bee. In a time of scarcity, some hive bees, after pillaging the nest of the humble bee, took entire possession of it: one or two, however, of the latter still lingered about their old habitation, and went into the fields to collect honey, which they brought home; the hive bees surrounded, licked them, and presented to them their probosces, never once showing the sting. By these means, Huber is of opinion, that the humble bee was fairly wheedled out of its stock of honey: these manœuvres lasted three weeks.

Their affection for their young is remarkable. When about to lay her eggs, the female is obliged to watch with the utmost care, and to drive off the workers, who greedily endeavor to devour them. Kirby thinks this instinct is bestowed upon the insect for the purpose of keeping the population within due bounds. For six or eight hours the cell containing her precious charge is anxiously watched by the mother; but, after this period, the desire to devour the egg ceases to animate the workers, and they now appear as assiduous in preserving, as they were before eager to destroy the young. They know when the food is consumed by the grub, and introduce a fresh supply through a small hole made in the receptacle, which is then carefully closed. As the grubs increase in size, the cell which contained them becomes too small; and by their exertions to be more at ease its thin sides are split. The workers, which stand constantly by to watch when their services may be wanted, apply a patch of wax to fill up these breaches as fast as they are made. The cells are thus daily increased in size, in order to accommodate the growing grub. When the larva is about to change into the pupa, the workers cluster over the cocoon, and thus cherish the tender inhabitant with that heat which is necessary to its existence. M. P. Huber put a dozen humble bees under a glass case, and gave them a piece

of comb composed of ten silken cocoons, so uneven that it had no foundation on which it could rest firmly. The bees were sorely disquieted, as they could not, on account of the unsteadiness of the comb, cluster on the young. Their affection suggested, however, an ingenious expedient. Several of them mounted upon the comb, and fixing their hindermost feet on its edge, and the foremost on the table, they succeeded in rendering the mass sufficiently steady to allow their comrades to cluster on the cocoons. For three days sets relieved each other; at the end of which time they had prepared wax enough to build pillars to fix the comb. By some accident these pillars were displaced, when the affectionate creatures resorted a second time to the same means, and assumed the same constrained posture. At last, compassionating their distress, Huber did that for them which they had been endeavoring so earnestly to do for themselves. It has been very naturally asked, 'If, in this instance, these little animals were not guided by a process of reasoning?' If this question be answered in the negative, it would be difficult to show the difference between reason and instinct: for it may be assumed as a certainty, that the circumstances under which our rustics were placed had never occurred to them during the course of their short existence, nor probably to ten of their species since the creation.

THE ROSE.

NATURAL ORDER—*Rosaceae*, comprising the rose, being a refrigerant, tonic and astringent. CLASS—*Icosandria*, having twenty or more stamens inserted on the calyx. ORDER—*Polygynia*, having many pistils. GENUS—*Rosa*, comprising roses. Calyx urn-formed, inferior, 5-cleft, fleshy; contracted towards the top: petals 5 in the native state, but increased by cultivation: seeds numerous, bristly, fixed to the sides of the calyx within.

—

'The rose abashed, with a comely blush
Unveils her virgin cheeks, and to the gods
Due honors pays, and with its fragrant smell,
Sabean odors like, perfumes their domes.'

—

THE rose, which is the emblem of beauty and the pride of Flora, reigns queen of the flowers in every part of the globe;

and the bards of all nations and languages have sung its praises. Yet what poet has been able, or language sufficient, to do justice to a plant that has been denominated the daughter of heaven, the glory of spring, and the ornament of the earth?

As it is the most common of all that compose the garland of Flora, so it is the most delightful. Every country boasts of it, and every beholder admires it; poets have celebrated its charms without exhausting its eulogium, for its allurements increase upon a familiarity, and every fresh view presents new beauties, and gives additional delight. Hence it renovates the imagination of the bard, and the very name of the flower gives harmony to his numbers, as its odors give sweetness to the air.

To paint this universal emblem of delicate splendor in its own hues, the pencil should be dipped in the tints of Aurora, when arising amidst her aerial glory. Human art can neither color nor describe so fair a flower. Venus herself feels a rival in the rose, whose beauty is composed of all that is exquisite and graceful.

It has been made the symbol of sentiments as opposite as various. Piety seized it to decorate the temples, while Love expressed its tenderness by wreaths, and Jollity revelled adorned with crowns of roses. Grief strews it on the tomb, and Luxury spreads it on the couch. It is mingled with our tears, and spread in our gayest walks; in epitaphs it expresses youthful modesty and chastity, while in the songs of the Bacchanalians their god is compared to this flower. The beauty of the morning is allegorically represented by this flower, and Aurora is depictured strewing roses before the chariot of Phœbus.

'When morning paints the orient skies,
Her fingers burn with roseate dyes.'

It is thought to have given name to the Holy Land where Solomon sang its praises, as Syria appears to be derived from *Suri*, a beautiful and delicate species of rose, for which that country has always been famous; and hence called *Suristan*, or the Land of Roses.

'Now upon Syria's land of roses
Softly the light of eve reposes.

Forster says, 'the rose Kashmire for its brilliancy and delicacy of odor has long been proverbial in the east.'

'Who has not heard of the vale of Cashmere,
With its roses, the brightest that earth ever gave?'

The oriental poetry abounds in flowery allusions to this plant.

'You may place,' says Jami, 'a hundred handfuls of fragrant herbs and flowers before the nightingale, yet he wishes not, in his constant heart, for more than the sweet breath of his beloved rose.'

'Oh! sooner shall the rose of May
Mistake her own sweet nightingale,
And to some meaner minstrel's lay
Open her bosom's glowing veil.'

The Ghebers say, that when Abraham, their great prophet, was thrown into the fire by the order of Nimrod, the flame turned instantly into a bed roses, where the child sweetly reposed.

The island of Rhodes owes its name to the prodigious quantity of roses with which it abounds.

Ludovico Verthema observes that Taessa was particularly celebrated for roses, and that he saw a great quantity of these flowers at Calicut—red, white and yellow; and Sir William Ouseley tells us, in his work on Persia, that when he entered the flower-garden belonging to the governor of a castle near Fassa, he was overwhelmed with roses. In Persia, wine and other liquors are brought to the table with a rose in the bottle instead of a stopple or cork.

Red and white roses are remarkable in English history as emblems of the houses of York and Lancaster; for when those families contended for the crown, in the reign of Henry VI. the white rose distinguished the partizans of the house of York, and the red those of Lancaster.

Jackson says, that the roses of the *Jinan Nile*, or garden of the Nile, attached to the Emperor of Morocco's palace, are unequalled, and that mattrasses are made of their petals for the men of rank to recline upon; and we read in Father Catrou's '*Histoire du Mogol*,' that the celebrated Princess Nourmahel caused an entire canal to be filled with rose water, upon which she took her pleasure with the Great Mogul.

The heat of the sun disengaging the water from the essential oil of the rose, this substance was remarked floating on the surface of the canal: and it was thus that the essence or *otto* of roses was first discovered.

A perfumer in Paris, who made otto of roses for the court of Louis XVI. says, it required four thousand pounds weight of rose leaves to produce seventeen ounces of the oil.

Of the birth of the rose, it is related in fable, that Flora having found the corpse of a favorite nymph, whose beauty

of person was only surpassed by the purity of her heart and chastity of her mind, resolved to raise a plant from the precious remains of this daughter of the Dryads, for which purpose she begged the assistance of Venus and the Graces, as well as of all the deities that preside over gardens, to assist in the transformation of the nymph into a flower, that was to be by them proclaimed queen of all the vegetable beauties. The ceremony was attended by the zephyrs, who cleared the atmosphere, in order that Apollo might bless the new created progeny by his beams. Bacchus supplied rivers of nectar to nourish it, and Vertumnus poured his choicest perfumes over the plant. When the metamorphosis was complete, Pomona strewed her fruit over the young branches, which were then crowned by Flora with a diadem, that had been purposely prepared by the celestials to distinguish this queen of flowers.

Anacreon's birth of the rose stands thus translated by Moore :—

'Oh! whence could such a plant have sprung?
Attend—for thus the tale is sung:
When, humid from the silvery stream
Venus appeared, in flushing hues,
Mellowed by ocean's briny dews—
When, in the starry courts above,
The pregnant brain of mighty Jove
Disclosed the nymph of azure glance—
The nymph who shakes the martial lance!
Then, then, in strange eventful hour,
The earth produced an infant flower,
Which sprung, with blushing tinctures drest,
And wantoned o'er its parent's breast.
The gods beheld this brilliant birth,
And hailed the rose—the boon of earth!
With nectar drops a ruby tide,
The sweetly-orient buds they dyed,
And bade them bloom, the flowers divine
Of him who sheds the teeming vine:
And bade them, on the spangled thorn
Expand their bosoms to the morn.'

Fabulous writers also account for the delicious perfume of the rose, by telling us that Love, in a feast of Olympus, in the midst of the gayety of a light and lively dance, overthrew, with a stroke of his wing, a cup of nectar, which precious liquor falling on the rose, embalmed it with that heavenly fragrance which it still retains.

The rose is said to have been originally white, and its change of color is thus eloquently accounted for by the luxuriant imagination of Catullus :—

'While the enamored queen of joy
Flies to protect her lovely boy,
On whom the jealous war-god rushes;
She treads upon a thorned rose,
And when the wound of crimson flows,
The snowy floweret feels her blood, and blushes.'

The first rose ever seen was said to have been given by the god of love to Harpocrates, the god of silence, to engage him not to divulge the amors of his mother Venus; and from hence the ancients made it a symbol of silence, and it became a custom to place a rose above their heads in their banqueting rooms, in order to banish restraint, as nothing there said would be repeated elsewhere; and from this practice originated the saying, '*Sub rosa*,' or 'Under the rose,' when anything was to be kept secret.

The Turks are great admirers of this lovely flower, and Mussulmen in general believe, that it first sprang from the perspiration of Mahomet, on which account they will not suffer a rose leaf to lie upon the ground, or permit any one to tread upon this sacred flower. In the luxurious days of the ancients, even the warriors crowned themselves with garlands of roses during their principal repast; and Pliny tells us that the delicate meats were either covered with the petals of these fragrant flowers, or sprinkled with their odorous oils. At a feast which Cleopatra gave to Antony, the royal apartments were covered with rose leaves to a considerable depth.

The triumvir, when dying, begged of the captivating queen that she would scatter perfumes on his tomb and cover it with roses.

In Turkey a rose is sculptured on the monument of all ladies that die unmarried; and in Poland they cover the coffins of children with roses, and when the funeral passes the streets, a multitude of these flowers are thrown from the windows. Camden tells us, there is a classical custom observed, time out of mind, at Oakley, in Surrey, England, of planting a rose tree on the graves, especially of the young men and maidens who have lost their lovers; so that this church-yard is full of them. It is the more remarkable, since it was anciently used among the Greeks and the Romans, who were so very religious in it, that we often find it annexed as a codicil to their wills, by which they ordered roses to be yearly strewed and planted on their graves. Hence the line of Propertius:—

'*Et tenera poneret ossa rosa.*' *

And Anacreon, speaking of it, says, that it protects the dead—

'Preserves the cold, inurned clay,
And marks the vestige of decay.'

This ancient custom of decorating graves with flowers, the symbols of fleeting mortality, has almost passed from recollection in England; but we read in the 'Beauties of England' that Thomas Stephens, a poor and aged man, of Stockenchurch, Oxfordshire, left a request that his eldest son would annually dress his grave with flowers on the recurrence of (the wake) St. Peters.

It seems now to be the study in that country to make their tombs monuments of oblivion, while in Paris they have renewed the ancient custom of planting flowers on the graves of their departed friends, particularly at the cemetery of Père la Chaise. 'It is impossible,' says Philips, 'to visit this vast sanctuary of the dead, where the rose and the cypress encircle each tomb, or the arbor vitæ and eglantine shade the marble obelisk, without feeling a solemn, yet sweet and soothing emotion steal over the senses as we wander over this variegated scene of hill and dale, columns and temples, interspersed with luxuriant flowering shrubs, and fragrant herbs, that seem to defy the most profane hand to pluck them.'

The Mexicans have from time immemorial studied the cultivation of flowers and odorous plants, which they employ in the worship of their gods; and in the temple of the true God the high priest was formerly crowned with roses. The Catholic church has still preserved the use of these flowers in its most sacred ceremonies, as it is always the rose that they strew before the holy sacrament in solemn procession.

Painters represent St. Dorothy holding a nosegay of roses, because it is told in her life that an angel gave her a bunch of roses; and a prodigy is related of St. Louis, a bishop, who was nephew to Louis IX. of France. It is pretended that a rose was seen to come out of his mouth after his death.

We cannot pass over unnoticed the well known story of the rose leaf, which shows how fond the eastern nations were of conveying their thoughts by hieroglyphics.

'At Amadan there was a famous academy, the rules of which were, that the members of it should think much, write little, and speak as seldom as possible. Zeb, a learned doctor, celebrated all over the East for his great knowledge,

* And lay his bones in soft roses.

hearing of a vacancy in this institution, hastened to the city in order to be elected. Unfortunately he arrived too late, for the place had already been filled by a candidate, who, like many in these times, owed his success to his power more than to his deserts. The president of the academy filled a vase so full of water that one additional drop would make it run over, by which the doctor was to understand that their society was too full to admit of another member.

'The learned Zeb was retiring sorrowfully, when by chance he perceived a petal of a rose at his feet, which he seized with promptness, and placed it so delicately on the top of the water, that it did not disturb the liquid in the least. This ingenious allusion was received by the assembly with the greatest approbation, and the academicians testified by their unanimous applause, their consent to the reception of the illustrious Zeb as a member of their society.'

Oriana, when confined a prisoner in a lofty tower, threw a wet rose to her lover to express her grief and love; and in the Floral language of the East, the presenting a rose bud with thorns and leaves, is understood to express both fear and hope; and when returned, reversed, it signifies that one must neither entertain fear nor hope. If the thorns be taken off before it be returned, then it expresses that one has everything to hope; but if the leaves be stripped off, it gives the receiver to understand that he has everything to fear.

The poet Bonefons sent to the object of his love a nosegay consisting of a white and a red rose, the one to indicate the paleness of his complexion, caused by anxiety, and the other by its carnation tint was to express the flames of his heart. The bouquet was accompanied by this verse :—

'*Pour toi, Daphne, ces fleurs viennent d'eclore,*
Vois, l' une est blanche, et l' autre se colore
D' un vif eclat: l' une peint ma paleur,
L' autre mes feux: toutes deux mon malheur.'*

Thus the flower which Philostratus dedicated to Cupid is made to speak the language of love. We are told that some persons have passed through life without feeling the arrows

* Daphne dearest, see these flowers,
Flowers which only bloom for thee;
Emblems true of painful hours,
Fraught with deepest wo to me.
This, its paleness now discloses,
The other flower with blushes burns,
Oh pray behold in both the roses,
How *Hope* and *Fear* hold sway by turns.

of the young god; and we read of others who could not endure the sight or smell of roses. Mary de Medicis, it is said, detested roses even in paintings, and the knight of Guise fainted at the sight of a rose. These aversions are unnatural, and the objects deserve our pity.

Man alone seems born to the delights of perfumes, and employs them to give energy to his passions, while animals, particularly insects, in general shun them. The beetle is said to have such an antipathy to roses, that the odor of this flower will cause its death; from which the ancients devised the allegory, to describe a man enervated by luxury, by representing him under the image of a beetle surrounded by roses.

As we now possess upwards of eight hundred different kinds of roses, it would be in vain to attempt the description of all the varieties and sub-varieties, which nothing short of the most minute inspection can discover, and the nicest pencil portray. We shall, however, attend to the description of some of the most celebrated growing in this country.

The Dog Rose. *Rosa canina.* The dog rose decorates our hedge rows with its tall, arching branches and lively odorous flowers in the months of June and July. It grows five or six feet high, having prickly stalks and branches, pineated five or seven-lobed leaves, with aculeated foot stalks, smooth, oval germs, and small, single flowers. There are two varieties, red-flowered and white-flowered. They will grow spontaneously in any part of our country, and a few are sometimes admitted into gardens to increase the variety of the shrubbery collection. It is the strong shoots of this species that the largest kind of garden roses are now engrafted on; and by this means we see, instead of bushes, tall stems throwing out a head in imitation of the forest trees. Where it is desirable to raise them to a height above dwarf bushes it has a good effect; as also when planted in flower gardens, as pinks and other flowers may cover the ground with blossoms, while the rose forms a kind of parasol over them; but in general a rose bush is preferable to a rose tree, and we are better pleased to look into a rose than up to it. Delille notices this modern practice with that of keeping apple trees in a dwarf state.

> 'Of old the rose on lowly bramble sprung,
> While high in air the ruddy apple hung!
> Now, strange reverse! the rose tree climbs the skies,
> While scarce from earth our apple trees arise.'

From the petals of this rose a perfumed water may be distilled, which is thought to be more fragrant than that from

garden roses. The leaves of this brier, when infused in boiling water, are often used as a substitute for tea, and have a grateful smell and sub-astringent taste.

The fruit of this brier also forms one of the greatest beauties among the autumnal tints, being of a bright scarlet, perfectly smooth and glossy, and of an elegant oblong shape. Many persons eat this fruit with pleasure when mellowed by frost. It was formerly much used as a conserve, the seeds being taken out, and the pulp beaten up with sugar.

The Moss Rose. *Rosa mucosa.* This elegant rose is generally supposed to be the offspring of the Provence rose, while others think it belongs to the family of centifolia or hundred-leaved rose. It is supposed to be a native of the south of Europe, though a plant too generally cultivated for anything to be averred on this subject. With us it is hardy, flowering in June and July. Most of the varieties are increased by roots or layers, and remain tolerably distinct; the different forms of variety are least permanent. The stems are usually three or four feet high, straight and very prickly, having five leaflets of a rounded-bluntish figure, veiny and rugose; flowers two or three, or more, at the top of each branch, large, delightfully fragrant, of that peculiar bright crimson hue popularly termed *rose color*, with broad brown stains on the backs of the outer petals. In all our cultivated varieties the flowers are double, with slight remains of stamens or styles; so that the fruit never ripens. But sometimes it bears perfectly single flowers; and, indeed, we have been told that this variety loses its mossiness almost immediately in Italy.

The moss rose is made the emblem of voluptuous love; and the creative imagination of the poet thus pleasingly accounts for this rose having clad itself in a mossy garment:—

'The angel of the flowers one day
Beneath a rose tree sleeping lay.
That spirit, to whose charge is given
To bathe young buds in dews from heaven,
Awaking from his light repose,
The angel whispered to the rose,—
"Oh, fondest object of my care,
Still fairest found where all are fair,
For the sweet shade thou 'st given to me,
Ask what thou wilt, 't is granted thee.'
"Then," said the rose, with deepened glow,
"On me another grace bestow."
The spirit paused in silent thought—
What grace was there that flower had not?

'T was but a moment—o'er the rose
A veil of moss the angel throws;
And, robed in nature's simplest weed,
Can there a flower that rose exceed?'

The moss rose is propagated by layers or suckers, which it sends up plentifully when growing in rich, light garden mould, that is rather moist than over dry. When the branches are laid down they should be slightly bent so as to crack the bark, which will cause them to take root sooner. This beautiful rose is also increased by budding upon stocks of the other sorts, which is generally performed in the month of May; but these plants are not so durable as those raised by layers.

The Hundred-leaved Rose. *Rosa centifolia.* This rose is a native of the south of Europe, and grows to the height of three or four to six or eight feet. Its numerous varieties are common throughout Europe and the United States, blooming in June or July. There are several varieties of this rose, all of which are hispid and prickly, pinnated three and five-lobed leaves, and very double red flowers, having very numerous petals, and of different shades in the varieties.

The Musk-Rose. *Rosa moschata.* This species of rose owes its name to the fine musky odor which its numerous white blossoms exhale during the autumnal months. It is a native of Barbary, and grows from six to eight or ten feet high or more, blowing from July to October. The branches terminate by large umbellate clusters of pure white musk-scented flowers. A very fragrant essential oil can be distilled from the petals, resembling the *Ottar* of the East Indies.

The Ever-blowing China Rose. *Rosa semperflorens.* This valuable rose is a native of China, and was introduced into England in 1789. The shrub is perfectly uninjured by frost, and where the air is pure, grows luxuriantly in the open ground, flowering the most part of the year. It is generally of humble growth, but in a rich loamy soil, on the outside of a green house, may be trained to a considerable height. The stem is much and variously branched, armed with scattered, short, hooked prickles. The petals are of a deep crimson, sometimes very dark, tremulous from the slenderness of their claws; paler at the back.

We have no plant upon record, either for utility or beauty, that has spread itself so rapidly over the globe as this rose has done within a half century. It now climbs up to look into the attic windows of the very houses where it once peeped out of the lower casement; and it is not uncommon to see its petals blush through a veil of snow in the month of

December; a thing so unusual formerly, that no longer back than the year 1800, Mrs. M. Robinson wrote the following verses on seeing a rose in flower at a cottage door in England, on the 25th of October of that year:—

'Why dost thou linger still, sweet flower?
Why yet remain, thy leaves to flaunt?
This is for thee no fostering hour——
The cold wind blows,
And many a chilling, ruthless shower,
Will now assail thee, beauteous rose!'

Although it is acknowledged that few plants contribute more agreeably to ornament our shrubbery in the autumnal months than this Chinese rose, yet we would not wish it to exclude or lessen the cultivation of the older and more beautiful species, but which, we fear it has already done to a considerable degree. As the smallest cuttings of this rose will grow, we are not without the hope of seeing it creep into our hedge-rows, where it would soon propagate itself both by suckers and seed.

Rosaries are formed in various devices; but the most common method is by planting the tallest standard rose trees in the centre of a clump, around which the different species and varieties are placed according to their height and growth, the edge finishing by the dwarf kind.

This sweet emblem of love, like the human body, breeds a canker in its bosom, that often destroys its heart.

——'She never told her love,
But let concealment, like a worm i' the bud,
Prey on her damask cheek.'

——'Death's suttle seed within
(Sly treacherous miner!) working in the dark,
* * * * *
The worm to riot on that rose so red,
Unfaded, ere it fell; one moment's prey!'

The principal enemy to the rose is a species of fly called the *saw-fly*, (*Tenthredo rosea*,) which pierces the tender flower bud, and thrusts an egg into the puncture, which soon becomes a caterpillar, that nourishes itself by eating away the heart of the young flower and fruit down to where it joins the stalk. It then loses its supply of nourishment, droops to one side and dies, while the insect spins itself a descending rope, by which it reaches the ground, and then entombs its body in a silken shell, while its transformation takes place, first into a chrysalis, and then a fly, which renews this work

of devastation. There are several flies of this genus that are all equally injurious to the rose tree. These flies are furnished with a very remarkable instrument, in the shape of a saw, by which they make small holes in the bark of the young branches, where they deposit their numerous eggs, which, on the preceding summer, are hatched by the warmth of the sun, and nourished by the ascending sap, until they assume the appearance of small green flies, in which state they issue from the bark in such numbers as to cover the tender shoots and leaves on which they rest, to suck the nutriment of the plant. These flies may be known by a yellow body and black head, with four wings edged with black, and yellow legs spotted with black. Another species of rose-fly has a head and breast of violet color, with a body of yellow, and legs and wings of pale violet. It may be seen in a summer's morning working on the branches of the rose tree; and from its sluggish nature will suffer itself to be taken between the fingers. The branches where it has deposited its eggs are so vitiated by it, that they are easily discovered, as they generally swell to a greater size than the parts above or below, and they often become black on the under side; when examined with a glass, the eggs may be discovered. These branches should be carefully cut off; and when the plants are covered with these insects, they should be brushed off with a bunch of feathers or some other suitable instrument, as they fix themselves too close to be washed off by water.

The red roses are astringent, and particularly so when taken before they are fully blown; conserves are made of both kinds of roses. Rose water is still in such demand at Damascus, for the purpose of cookery, that many hogsheads of it are sold daily in the markets of that city.

Ladies may make their own milk of roses, by simply adding one ounce of the oil of almonds to a pint of rose water, after which ten drops of the oil of tartar is to be added.

We shall conclude our history of the rose with the lines of the Ayrshire Ploughman:—

'May'st thou long, sweet crimson gem,
Richly deck thy native stem;
Till some ev'ning, sober, calm,
Dropping dews, and breathing balm,
While around the woodland rings,
And every bird thy requiem sings;
Thou, amid the dirgeful sound,
Shed thy dying honors round,
And resign to parent earth
The loveliest form she e'er gave birth.'